Electric Feedback Forum
Office of Governor Martin O'Malley
Improving Maryland's Electric Distribution System

Roundtable Discussion #8: Cost Recovery

Sept. 11, 2012, 1:30pm – 4:30pm
President's Conference Room East 1 and 2
Miller Senate Office Building
11 Bladen Street
Annapolis MD, 21401

Executive Order 01.01.2012.15

List of Invited Participants

Greg Carmean, Executive Director, Organization of PJM States

Rajnish Barua, Ph.D., Executive Director, NRRI

Mark Case, Vice President, Strategy and Regulatory Affairs, BGE

Paula Carmody, Office of People's Counsel Representative

Tammy Bresnahan, Associate Director of Advocacy, AARP Maryland

Reid Detchon, Energy Future Coalition

Managing Director, Investment Banking Division, Credit Suisse

A Primer on Cost Recovery for Utilities

Rajnish Barua, Ph.D.
Executive Director
National Regulatory Research Institute
www.nrri.org
11 September 2012

Models of Cost Recovery

- Traditional Cost of Service Rates
- Incentive Rates
  - Rate/price caps
  - Revenue caps
  - Performance-based rates (PBR)

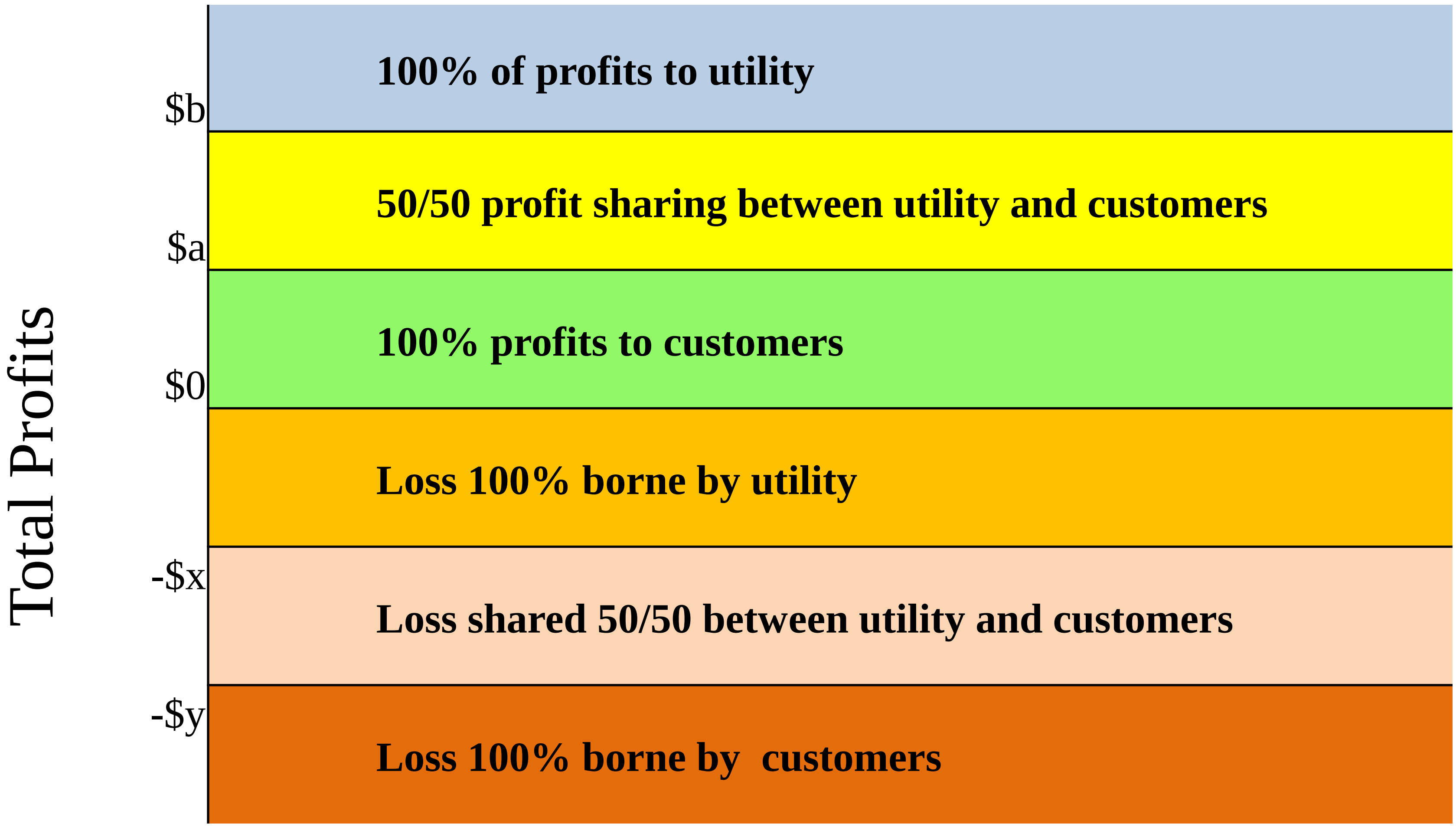
Rate/Price Caps

- Mostly in other countries
- A target rate is set by regulator
- Periodic changes allowed in relation to certain measures, e.g., annual rate of inflation
- Provides incentive to utility for cost reduction in expenditures: capital and operating
- Customers know what they are paying for a fixed period
- US experience: rate “freeze” during restructuring, leading to large increase at end of “freeze”

Revenue Caps

- Similar to Price Caps except cap is on total utility revenues
- Periodic reviews/changes
- Customers may pay different per unit rate in accordance to usage
- Quality of service measures important to be set prior to approval of cap

Performance Based Rates (PBR)



Note: Values a, b, x, y need not be equal.

Components of a Typical Electric Bill in a Retail Choice State

JOHN DOE
Account number: 1234 5678 9000

Your electric bill for the period
March 28, 2011 to April 29, 2011

Details of your Electric Charges

Residential Service - service number 1234 5678 9000
Electricity you used this period

Meter Number Energy Type	Current Reading	Previous Reading	Difference	Multiplier	Total Usage
NXA107305043	Apr 29	Mar 28			
Usage (kWh)	001843 (actual)	000842 (actual)	1001	1	1001

Your next meter reading is scheduled for May 26, 2011

Delivery Charges: These charges reflect the cost of bringing electricity to you. Current charges for 32 days, winter rates in effect.

Type of charge	How we calculate this charge	Amount($)
Customer Charge		8.20
Distribution Charge: First	500 kWh X $0.026073 Each kWh	13.04
Last	501 kWh X $0.026073 Each kWh	13.07
Total Electric Delivery Charges		**34.31**

Supply Charges: These charges reflect the cost of producing electricity for you. You can compare this part of your bill to offers from competitive suppliers. The class average annual price to compare is 11.47 cents per kWh.

Type of charge	How we calculate this charge	Amount($)
Transmission Capacity Charge:	6.41 kW X $1.612900	10.34
Standard Offer Service Charge: First	500 kWh X $0.107180	53.58
Last	501 kWh X $0.107180	53.68
Total Electric Supply Charges		**117.60**
Total Electric Charges - Residential Service		**151.91**

Electric Summary

Balance from your last bill	**$173.77**
Payment Apr 1	$100.00-
Payment Apr 15	$ 73.77-
Total Payments	**$173.77-**
Electric Charges (Residential Heating)	$151.91
New electric charges	**$151.91**
Total amount due by May 22, 2011	**$151.91**

Components of a Typical Electric Bill in a Retail Choice State

Item	Amount	% of Total Bill	"Decided by"
Customer Charge	$8.20	5%	State - PSC
Distribution	$26.11	17%	State - PSC
Supply	$107.26	71%	Customer
Transmission	$10.34	7%	Federal - FERC
Total Bill	**$151.91**	**100%**	

Summary

- Change in cost recovery model may not necessarily achieve changes in the system
- Understanding the mechanics of the whole system is important for decision-making
- For long-term investments in the infrastructure, short-term reactions not necessarily helpful
- Utilities need customers and vice-versa

ELECTRIC FEEDBACK FORUM
OFFICE OF GOVERNOR MARTIN O'MALLEY
IMPROVING MARYLAND'S ELECTRIC DISTRIBUTION SYSTEM

ROUNDTABLE DISCUSSION #8: COST RECOVERY
SEPTEMBER 11, 2012

Paula M. Carmody

People's Counsel

Maryland Office of People's Counsel

Regulation of Public Service Companies (Utilities)

- PUA Sec. 5-201: Companies must have a franchise to operate as a public service company; they cannot exercise that franchise without the permission of the PSC
- PUA Sec. 5-303: Utility companies are obligated to provide safe, adequate, just, reasonable, economic and efficient services
- PUA Sec. 4-101 *et seq.:* PSC have power to determine a "just and reasonable" rate to be paid by ratepayers for these utility services
- PUA Sec. 4-201 *et seq*.: Regulated utilities can only charge ratepayers the "just and reasonable" rate approved by the PSC
- PUA Sec. 3-101 *et seq.:* The rate proposals are scrutinized in evidentiary proceedings resulting in PSC orders

Traditional Ratemaking Principles

- Utility Rate Regulation Principles – Balance of stakeholder interests
  - Customers should receive safe and reliable service at "just and reasonable rates"
  - Utility should have opportunity to recover prudently incurred costs and authorized rate of return
    - *FPC v. Hope Natural Gas Co*., 320 U.S. 605 (1944)
    - MD PUA, §§ 4-101 and 4--201
- Cost-based ratemaking
  - State Commission approves utility rates in a formal proceeding
    - The utility seeks a rate change (typically an increase)
    - Other stakeholders may seek a rate change (typically a decrease)
  - Base rates are based on a test year
    - The test year is basically a "snapshot" for a fixed period (MD – Actuals)
      - Operating income
      - Operating expenses
      - Customer classes and numbers
  - Rates remain fixed between rate cases
    - Individual Elements may change – expenses, revenues, customers
    - Utility has opportunity to earn its authorized rate of return (ROR)
    - Utility can seek relief if it believes it cannot earn its authorized ROR

Ratemaking: First Principles

“**We begin with first principles**. For one hundred years. . .one of our primary functions has been to establish the rates that public service companies can charge their customers. We and our predecessors have done this by comprehensively reviewing the companies’ costs and revenues, defining the rate base, establishing an appropriate rate of return, and translating the resulting revenue requirement into rates. . .In the electric and gas industries, we establish the rates . . . according to traditional cost-of-service principles, and those fundamental principles have not changed.”

MD PSC BGE Smart Meter Order, Order No. 83410 (June 21, 2010), p. 28.

Consumer Perspective: Advantages of Traditional Ratemaking

- Fairness: Non-utility stakeholders can engage in scrutiny of utility rate proposals
  - Discovery
  - Expert witnesses: Testimony
  - Ability to challenge utility case ("put it to the test")

- Get the whole picture: Revenues, expenses, capital investments and depreciation and return on equity can be reviewed together
  - The matching principle
  - Avoid single-issue ratemaking

- Efficiency: Regulatory lag provides incentive to control costs

- Flexibility: Exceptional circumstances can still be addressed within a rate case or other proceeding
  - Reliability Plant Additions: Use of Year-End (not average) Balance
  - Major Storm Outage Adjustments
  - Depreciation Adjustments
  - Use of other mechanisms

Trackers, Surcharges and Other Rate Adjustment Mechanisms

- Utilities and financial sector have an increased interest in adoption of cost-recovery mechanisms outside of base rate proceedings
- Types
  - Purchased electricity and gas costs (FCA; PGA)
  - Systems benefit charges
    - Renewable energy surcharges
    - Energy efficiency, conservation and demand response
    - Energy assistance
  - Major Infrastructure projects
  - Uncollectible costs
  - Pension costs
  - Environmental costs
  - Decoupling mechanisms

Common Explanations for Trackers, Surcharges and Other Rate Adjustment Mechanisms

- Fuel and other supply costs are volatile and beyond control of utility
- Encourage energy efficiency as an alternative to traditional supply costs
- “New circumstances require new approaches”
- Better matching of revenues with costs
- Avoid regulatory lag
- Greater cost-recovery certainty
- Lower financial risk means lower financial costs
- Reduce regulatory scrutiny and rate case costs
- Necessary for replacement of aging infrastructure

Maryland Experience: When Trackers or Surcharges Have Been Permitted

- Fuel and supply costs
  - Purchased gas and fuel cost adjustments (PGAs and FCAs)
    - PUA §§ 4-401 and 402: Gas companies and small electric companies
    - Annual prudency reviews

  - Fuel cost adjustments for large electric companies
    - PUA § 4-403 repealed in 1999
    - 1999 deregulation law required sale or transfer of all generating plants

  - Standard Offer Service (SOS) – Procurement of electricity supply
    - PUA § 7-501 *et seq*.: 1999 Deregulation law
    - Surcharge *rejected* for expenses related to Purchase of Receivables (POR) of energy suppliers by utilities

Maryland Experience: When Trackers or Surcharges Have Been Permitted

- Public Policy Requirements
  - Energy efficiency and demand response surcharges
    - No Systems Benefit Charge (SBC) for renewable energy and energy efficiency in 1999 electric restructuring law
    - EmPower Maryland Law set reduction targets for energy usage and peak demand
      - PUA § 7-211(f) (2008)
    - EmPower Maryland Programs: BGE, Pepco, Delmarva Power, Potomac Edison and SMECO
  - Energy assistance – EUSP
    - Ratepayer-funded program established as part of restructuring law
      - PUA § 7-512.1

Maryland Experience: Other Adjustments

- Revenue Decoupling
  - Gas Utilities
    - Weather Normalization Adjustments (WNAs)
      - Washington Gas Light Company and Columbia Gas
  - Electric Utilities
    - Bill Stabilization Adjustments (BSAs) (to support energy efficiency)
      - BGE, Pepco and Delmarva Power
      - Reduction in risk: ROE reduced by 50 basis points
      - Exception: Major storm outage

- Adjustments to Test Year
  - Average versus Year-End (terminal) Balance for Reliability Plant Additions
  - Reliability Expenses Outside of Test Year (“known and measurable”)

Maryland Experience: Distribution Rates

- Maryland PSC has rejected surcharge and tracker proposals after full evidentiary hearings
  - Reliability Investment Mechanism (RIM)
    - Delmarva (Case 9285) and PEPCO (Case 9286
  - Accelerated pipeline replacement program
    - WGL (Case 9267)
  - Smart meters
    - BGE (Case 9208)
  - Uncollectible expenses
    - PEPCO and Delmarva Power
  - Pensions and OPEB costs
    - PEPCO and Delmarva Power

Commission Reasons for Rejection

- Delmarva Power Rate Case (Case 9192, Order 83085)
  - Uncollectible, pension and OPEB expenses
    - Guarantee dollar-for-dollar recovery of specific costs
    - Risk is shifted to customers
    - Diminish utility incentive to control costs
    - Exclude classic, ongoing utility expenses from the “standard, contextual ratemaking analysis”

- Similar proposal rejected in Washington Gas Light Co. rate case (94 Md. PSC 329 (2003)

Commission Reasons for Rejection

- BGE Smart Meter Case (Case 9208, Order 83410)
  - Same reasoning as *Delmarva* case
  - Rejected utility arguments re:
    - Scale of investment
    - Possible negative reaction of rating agencies to rejection of surcharge

"We are not in the business of attempting to predict rating agency reactions, nor of calibrating our decisions to what the utilities say the agencies want or expect" (MD PSC Order 83410, p. 30)

- BGE's project is "a large, but classic, investment in BGE's infrastructure"

Commission Reasons for Rejection

- WGL Rate Case (Case 9267, Order 84475, pp. 2-3)
  - MD PSC rejected WGL Accelerated Pipeline Replacement Plan and Surcharge proposal
    - "We find that the Company has historically demonstrated the ability to replace its infrastructure when necessary to ensure safety and reliability, and that it can do so using traditional ratemaking procedures without compromising its ability to earn an appropriate return."
    - "But the mere fact that the Company plans increased infrastructure investments does not justify a surcharge, which would represent a fundamental shift from long-standing rate-making principles."
    - "We recognize that accelerating its pipe replacement program may require the Company to file somewhat more frequent rate cases than it would prefer. That is not, in our view, a negative outcome – rate cases afford all parties, and this Commission, the opportunity to ensure that rates are just and reasonable . . ."

Rate Adjustments, Compliance Orders, Penalties and Other Responses to Deficient Service Quality and Reliability

- Rate adjustments
  - Disallowance of O&M ”catch-up” expenses related to previous failures or deficiencies in maintaining a reliable distribution system
  - Disallowance of some or all of a utility’s damage and restoration costs resulting from storms or other major outage events
  - Adjustments to Return on Equity (ROE) for poor past performance
- Compliance Orders
  - PUA Sec. 2-112 and 2-113: PSC has broad jurisdictional and supervisory authority over utilities
  - PSC can impose specific requirements on a utility to address service quality and reliability deficiencies
- Civil Penalties – PUA Sec. 13-101 *et seq.*
  - Violations of PSC law, regulations, orders or rules
  - Maximum of $25,000 per violation (per day)
- Ability to Exercise Franchise

A Ratepayer Advocate's Perspective on Rate Cases and Cost Recovery Mechanisms

- RATE CASES
  - are time-consuming, but not a bad thing
  - provide an open forum for stakeholders to present their point of view
  - give consumer advocates an opportunity to test and challenge the utility numbers and policy proposals
  - provide transparency to ratepayers who pay the bills
  - provide the state commissions an opportunity to examine and challenge the experts
  - provide the best means of ensuring a balance of interests of utility investors and the ratepayers
- Alternative cost recovery mechanisms should be allowed only when they are shown to be necessary for the provision of safe and reliable service at just and reasonable rates
- Cost disallowances should be used if and when PSC determines that a utility has not met its obligations to provide safe and reliable service

Recommendations
Reliability and Resilience of Electric Distribution Systems

- Short-Term
  - Priority focus: Safety and reliability of system are core public service *obligations* of utilities
    - Ongoing operation and maintenance of system
      - Additional storm hardening
      - Target reliability “fixes” to get most immediate relief
      - Address chronic outage pockets
    - Adoption and use of technologies to enhance reliability and resilience
    - Address service restoration concerns
      - Damage assessment and line crew availability versus mutual assistance crews
      - Communications with state and local agencies, particularly public safety
      - Fix customer communication systems and information deficiencies
      - Systems to identify and respond to vulnerable customer needs (including facilities, apartments/condominiums servicing older and disabled persons)
  - Management and workforce audits – should these be considered?
  - Consider adoption of specific performance standards for customer and public safety communications in major outage events

Recommendations
Reliability and Resilience of Electric Distribution Systems

- Long-Term
  - *Planning* is required for maintenance and operation of current systems, integration of new approaches and technologies, and inclusion of future actions to meet existing public policy goals regarding climate change, energy efficiency and demand response and renewable energy
    - Who is responsible for this?
    - How will it be accomplished?
  - *It's complicated*: Technical, legal, regulatory and cost considerations will all need to be addressed
  - Statewide and utility-specific plans will need to accommodate a high level of reliability for all customers while considering ways to meet additional reliability needs for critical services and business needs

References and Resources

- www.psc.state.md.us
  - Case 9286 (PEPCO) – Order No. 85028
  - Case 9285 (Delmarva Power) – Order No. 85029
  - Case 9267 (WGL) – Order No. 84475
  - Case 9208 (BGE) - Order Nos. 83410 (pp. 28-30) and 83531
  - Case 9192 (Delmarva Power) – Order Nos. 83040 (p. 2) and 83085 (p. 15)
  - *Re Washington Gas Light Co*., 94 Md. PSC 329, 353 (2003)

- www.opc.state.md.us
  - OPC Testimony on HB 596 and SB332, http://www.opc.state.md.us/opc/Legislation/State/Testimony.aspx

- www.nrri.org
  - Ken Costello, "How Should Regulators View Cost Trackers," National Research Regulator Institute (September 2009)

For More Information

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Governor's Executive Order Roundtable: Cost Recovery

BGE®

Mark Case
VP Strategy & Regulatory Affairs
September 11, 2012

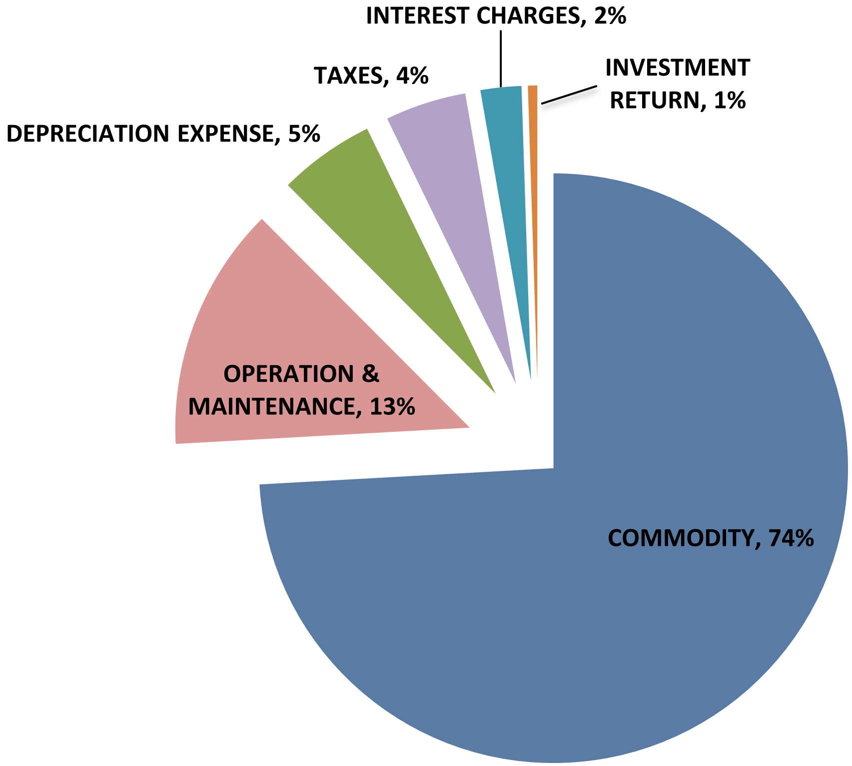
Traditional Cost Recovery

- Traditional "rate case" cost recovery is not a viable option for improving system resiliency over a reasonable timeframe
  - Utilities are already experiencing severe regulatory lag associated with significant and growing investments in replacing aging infrastructure and implementing new systems and technologies to enhance service to our customers
  - Maryland's historical approach of using "backward looking" test years means revenues are inadequate to keep pace with rising costs and increased capital investment
  - Significant costs already being deferred on utility balance sheets (eg, Smart Grid, some EmPOWER programs)
  - Rate cases are the least credit supportive approach available which translates into higher financing costs for customers
  - Declining energy usage means utilities have limited revenue growth to finance new capital investment
  - Expensive, time consuming process to litigate base rate cases

- Utilities, like any other business must ultimately live within their financial means, which are much more constrained under traditional rate cases

Current Utility Rates Do Not Provide the Required Funding

BGE Residential Electric Monthly Bill Components (exploded section is Distribution-only)



Typical bill is approximately $113/month

- The vast majority of a customer's bill is for electric commodity costs
- Of the distribution portion of the bill, almost all of the revenues go to covering actual costs (O&M, depreciation, taxes, interest)
- Only about 1% of a customer's bill goes back to shareholders as an equity return on their investment
- Thus, any major new long-term investment program requires utilities to raise additional capital, which must be covered by additional revenue sources

An Alternative Cost Recovery Model is Necessary

- An infrastructure cost recovery mechanism (ie, tracker) will be needed to finance any long-term program to improve system reliability and resiliency
  - This could be achieved through 2 possible paths: a) changes to the existing regulatory process, or b) via new legislative mandates

- Many essential benefits to an infrastructure cost recovery mechanism
  - Allows utilities to raise the significant additional capital needed
  - Viewed much more favorably by capital markets and rating agencies allowing financing at a lower cost of debt, saving customers money
    - Similar to MD's AAA credit rating allowing lower financing costs for taxpayers
  - In addition to lower interest charges, customers will also benefit from lower operational expenses and a more reliable and resilient grid (ie, societal cost savings)
  - Ensures small, gradual rate adjustments as benefits are building – can also accommodate appropriate guardrails on bill impacts
  - Commissions retain full oversight/scrutiny of investments and cost levels
  - Even with a tracker mechanism, cost recovery still occurs over the useful life of the investment (eg, 30 to 40 years typically)
  - More and more states, regulatory commissions, and utilities are moving to this model due to the compelling benefits
  - FERC has also moved to a similar model (formula rates) to successfully facilitate increased investment in electric transmission; annual industry investment has doubled under this approach

Other Topics

- Allocation of Risks Must Be Equitable
  - Inappropriate to subject utilities to financial penalties for circumstances and weather events reasonably beyond their control
  - Public Service Commission already has the authority to impose penalties, deny cost recovery, or adjust return levels if it finds a utility acted imprudently or that it failed to meet newly imposed reliability standards
  - The quality of a state's regulatory environment is an important factor considered by credit rating agencies, and is already of significant concern
    - ROE levels among the industry's lowest
    - Limited opportunity to actually earn the ROE levels authorized
    - Decisions regarding cost recovery, etc.

- "Tiered reliability" – charging some consumers more for a higher level of service – is not a practical approach
  - Likely to be viewed as a discriminatory practice
  - Would be offensive to many utility customers – either being forced to pay more or receiving an inferior level of service than other customers
  - Impractical to execute even if desirable
    - Electric grid is a highly interconnected network not well suited for such an approach
    - Significant governance issues – who would decide which communities participate?

Cost Recovery for Reliability and Resiliency

AARP

Tammy Bresnahan
AARP Maryland
September 11, 2012

Consumer Expectations

- Consumers expect, and pay for, reliable utility service in their rates
- Consumers understand that outages occur
- Customers do expect accurate, useful, and timely information about restoration efforts

Surcharges not appropriate or necessary for cost recovery

- Utilities often want a surcharge or rider to recover costs up front
- Can reduce the utility’s incentive to control costs
- Surcharge review more limited than a rate case
- Efficiencies or other factors that offset costs are not captured in a surcharge
- Revenue stream benefits utility over ratepayers
- Infrastructure expenses are not unusual or volatile

AARP™

Reliability Investment Mechanism (RIM) as Proposed by Pepco/Delmarva

- Changes in traditional rate regulation
- Not shown to reduce the number or frequency of rate cases
- Companies not accountable to meet the required reliability standards
- No evidence that RIM result in lower costs or less frequent rate cases
- AARP opposed this proposal

If Surcharge Implemented

- Strictly limit the costs allowed to be recovered
- Limit the number of surcharges on customer bills
- Sunset the surcharge after a reasonable period of time
- Structure surcharge so that ratepayers are refunded over collections
-
- Include efficiency gains and other offsetting factors in the calculation of the surcharge
- Lower return on equity to reflect the reduced risk
- Regularly audit the prudence and reasonableness of the surcharge and underlying costs

AARP™

Is Performance Based Ratemaking Feasible?

- Broad term that could mean any of several mechanisms or formulas that are a shift from cost of service regulation

- Ratemaking structure is changed

- Plans usually include a mechanism to raise or lower rates without a full rate case and feature automatic adjustments for inflation and productivity

- Plans may include an opportunity for utility shareholders to earn additional profit— why should consumers pay MORE for the reliability they deserve

- Utilities should not have to be “incentivized”

Should certain communities be able to pay for upgraded service?

- Unfair and unnecessary-- difficult to administer.
- Would communities “vote” to pay more/ pay for what?
- What about those who vote no?
- Can’t afford the additional expense?
- AARP supports enforceable performance standards that also ensure utilities do not discriminate in their restoration of power after a major storm among its communities.

AARP™

Who should bear the financial risk of unreliability?

- Utilities should be held to enforceable standards for both reliability and resiliency
- Should be penalized when they fail to perform
- Customers understand that 100% reliability cannot be guaranteed
- If customer needs 100 percent reliable power like a hospital or business, that customer would bear the financial and operating risk or take measures to have back up power or any other means to reduce their risk

AARP™

Recommendations

- Tighten up the reliability performance standards
- Revise call center performance
- Eliminate the impact of handling automated calling options from the performance standards
- Require the major outage event plans to be reviewed and approved by the Commission rather than just filed with the Commission
-
- Require more enforceable performance standards for major storm events
- Strengthen penalties—tie the failure to achieve standards to a decrease in the utility's rate of return

Additional Recommendations

- Consider statewide effort to recruit, train, and deploy damage assessors for utilities when a major storm occurs and widespread outages result

- The most important recommendation is to DO NO HARM

Ready for Reform:

A Consumer-Driven Business Model for Maryland's Electric Utilities

Reid Detchon, Energy Future Coalition
September 11, 2012

Energy Future Coalition

- Three challenges:
  - Oil dependence
  - Climate change
  - Access to modern energy services
- Three opportunities:
  - Renewable energy
  - Energy efficiency
  - Smart grid
- Hampered by regulatory failure

Time for Change

- Regulatory compact is 100 years old
- Incentives are not well aligned with consumer benefit
  - Energy efficiency incentives grafted on piecemeal
  - Systematic reform needed to adapt to new technologies, maintain reliability
- Reward performance, not investment
  - Outputs, not inputs

Performance-Based Rewards

- System well established elsewhere
  - U.S. Department of Defense
- Identify objectives and metrics, e.g.:
  - Maintain reliability
  - Reduce customer costs
  - Support distributed generation, demand reduction
  - Provide good customer service
  - Integrate smart grid technologies
- Needed: Culture shift within utilities

Pilot the Transition

- Maryland can lead the way
  - Enlightened political leadership
  - Decoupled utilities
  - Disgruntled consumers ready for change
- Transformation should be tested
  - 1–2 pilots
  - Preparation, demonstration, evaluation
- A new model
  - Less pain, more gain

STATEMENT OF REID DETCHON
EXECUTIVE DIRECTOR, ENERGY FUTURE COALITION

Maryland Electric Feedback Forum
Roundtable Session VIII: Cost Recovery
September 11, 2012

Thank you for the opportunity to participate in today's roundtable on cost recovery. Gov. O'Malley is to be commended for his active engagement in these difficult issues, where the arcane world of utility regulation impacts directly on the public. The result is often unhappy consumers. We will propose, however, that the moment is right for bold change in the regulatory compact that links utilities and their customers – change that will lead to a novel outcome: happy consumers.

I am Executive Director of the Energy Future Coalition, a non-partisan U.S.-focused public policy initiative that was launched 10 years ago to address three principal energy challenges:

- The political and economic security threat posed by the world's dependence on oil.
- The risk to the global environment from climate change.
- The lack of access of the world's poor to the modern energy services they need for economic advancement.

The Coalition seeks to connect these challenges with a vision of the vibrant economic opportunities that will be created by a transition to renewable energy, energy efficiency, and the smart grid – three areas where electric utilities play a dominant role – and it has sought to shift the nation's energy policy conversation toward concrete, actionable solutions that can win broad support from business, labor, and the environmental community.

This series of roundtables was convened to consider how to improve and strengthen Maryland's utility infrastructure and create a more resilient electric distribution system, with a particular focus on infrastructure investments that will improve the reliability of the electric power grid. Reliability, like the topics just mentioned – renewable energy, energy efficiency, and the smart grid – is an area where the performance of the state's utilities is not providing the optimal mix of benefits to consumers. In ordinary commerce, that would be called a market failure, and at least in theory, competitive firms would step in to provide what customers want. There is, however, a natural monopoly in the distribution of electricity under the hub-and-spoke utility model, and regulation exists to protect consumers from predatory behavior by their utilities. Yet regulation is not optimizing consumer benefit – a regulatory failure that is also a root cause of performance failure. Even as the state considers how to drive near-term improvements in reliability, it should also consider changes to the regulatory structure that will yield broader long-term benefits to consumers and to the state's economic vitality – by rewarding performance, not investment, measuring outputs, not inputs.

The most fundamental goal of investor-owned utilities, like most businesses, is pretty simple – maximizing shareholder value. State regulatory structures have sought to provide utilities with a reasonable rate of return on investment while minimizing the cost to consumers, as reflected in electric rates. That formula, now a century old, was wildly successful in building a system that delivered reliable, affordable electricity to consumers. Recent efforts to bring market forces more strongly into play have led to some economic efficiencies but have not adequately considered their impacts on the system as a whole – which brings us to today's discussion of reliability and other attributes that consumers want.

One of those objectives, clearly recognized for many years, is to minimize unnecessary energy use in the generation, transmission, and consumption of electricity. More than any other area, this has been the subject of relentless experimentation by state regulators – but with only partial success. The key, as recognized in the widely supported National Action Plan for Energy Efficiency, is aligning the financial incentives of utilities with the delivery of cost-effective energy efficiency. The Action Plan notes three undesirable financial effects that energy efficiency spending can have on a utility:

- Failure to recover program costs in a timely way has a direct impact on utility earnings.
- Reductions in sales due to energy efficiency can reduce utility financial margins.
- As a substitute for new supply-side resources, energy efficiency reduces the earnings that a utility would otherwise earn on the supply resource.

Regulators have responded to this problem through various combinations of program cost recovery, lost margin recovery, and performance incentives. By and large, however, these changes have been grafted onto the pre-existing financial model and have met with limited success. Addressing energy efficiency alone might make sense if that was the only outcome sought. However, as my colleague John Jimison discussed in the opening roundtable of this Electric Feedback Forum on August 21, such a piecemeal approach ignores the dramatic transition in utility practices that will unfold in coming years:

- Innovative smart technologies will allow consumers to produce and store electricity as well as use it, creating a massive increase in digital information that can be used to optimize the security and economics of the system.
- Utilities will be required to meet stricter standards for air pollution, water use, vegetation maintenance, and, well within planning time horizons, carbon emissions.
- Utility business models must adjust to their customers' increased ability to respond to price signals, third-party entrants in utility services (including energy efficiency), and flat or declining overall power demand.
- Most relevant to this discussion, the importance of electricity to an increasingly digital economy will increase pressure for "nine nines" reliability.

Utilities and regulators should work together to prepare for this transition – by transforming the way they do business, away from an investment-based, rate-of-return model toward one that is based on specific performance metrics that are carefully negotiated and agreed in advance – and Maryland can take a lead role in this nationally.

Utilities should only do well for their shareholders if they also do well for their customers; it is disconnecting the two that leads to consumer outrage. Maryland consumers should see a correlation between their satisfaction and their utility's profitability. Of course, utilities must not be put at risk for decisions already made and approved, and their revenues must allow them to service their debt, as a minimum starting point. Additional compensation, however, should reward good performance – and even provide superior returns for superior performance.

Performance-based contracting is common in many fields. For example, the stated policy of the U.S. Department of Defense is that "in order to maximize performance, innovation and competition, often at a savings, performance based strategies for the acquisition of services are to be used wherever possible." Clear, attainable, objective performance standards and metrics, carefully negotiated and agreed in advance, are to determine compensation under award-fee contracts.

If it's good enough for the military, it certainly should be possible to apply it to utilities through performance metrics for key consumer benefits such as reliability and efficiency. For example, utilities should be rewarded for reducing their customers' costs – e.g., by investing in cost-effective efficiency and conservation measures that reduce monthly bills while delivering the same level of energy services – even if rates do not go down. (Californians have high rates but low bills.) Utilities that welcome cost-effective distributed generation and other demand reduction measures should also benefit. If these steps end up reducing the net cost of acquired power for the entire system, as they should, utilities and consumers should share the benefit. Customer service and satisfaction is another area that can be objectively measured – e.g., by J.D. Power and Associates – where utilities should be rewarded for good performance.

Smart grid investments provide another illustration. As Paul Alvarez, President of the Wired Group, put it recently in Smart Grid News: "Capital investment does not (by itself) make a grid smart. The value comes from the manner in which utilities make use of smart grid data and capabilities." He said that "regulated utilities should NOT be rewarded simply for making smart grid investments. Instead, they should be rewarded for maximizing smart grid value (by completing difficult organizational, operational, data utilization and customer-facing changes required)." Regulators in Oklahoma and Ohio have taken a step in this direction by approving performance-based smart grid cost recovery tied to savings in operations and maintenance, but that's just the tip of the iceberg. Forward-looking investments in the use and management of customer data – e.g., by shifting the charging of plug-in hybrid electric vehicles to times when power is cheapest and cleanest and by enabling compensation to vehicle owners for load balancing – can reduce costs and improve the system's reliability, and those results should be rewarded.

David O'Brien of Bridge Energy Group, a former state regulator in Vermont, put it this way: "The innovation, scale of investment and uncertainty around SG [smart grid] platforms do not comport with traditional cost of service ratemaking. … Performance Based Ratemaking (PBR) changes all of that and is a perfect vehicle to facilitate utility innovation and transformation of the business model. The SG technology, whether it be customer or grid facing, opens the door to a whole series of quantitative and qualitative improvements to the customer experience, and utilities who are willing to go down that road, measure their performance and be accountable for outcomes should enjoy a financial upside. … It is a fair bargain if the customers have measurably benefitted and the utility prospers. The traditional ratemaking process … is a race to the bottom of sorts where the climate is confrontational and emphasis is largely on the lowest possible number. Not the sort of dynamic that sparks innovation and superior outcomes." He also said, "With grid modernization I see no other path, the key is symmetry of benefits and risk between ratepayers and shareholders. I do not see the capital markets making the billions of dollars necessary for grid modernization available under the current rubric. If all of the risk appears to rest with shareholders SG will be very difficult to underwrite."

Performance-based ratemaking is not a new concept – indeed, an entire issue of *the Electricity Journal* was devoted to it in 1996 – but its adoption may have been hindered by the difficulty of grafting it onto traditional rate-of-return models when a wholesale change is needed instead to change utility DNA. According to a July 2012 report by the Edison Foundation's Institute for Electric Efficiency, 23 states currently have performance incentives in place, with six other states awaiting regulatory approval. This progress on energy efficiency alone needs to be applied more generally to the way utilities are compensated.

This shift to a performance-based model will require a significant culture shift within utilities, but it is certainly possible. Roland Risser, now Director of the Building Technologies Program at the U.S. Department of Energy, says that when he was at Pacific Gas & Electric, decoupling and performance incentives for energy efficiency turned what had been a compliance function into a vital piece of the company's business.

As Scott Hempling, a noted expert on regulatory law, told us recently, "The central question is not 'What is the right "utility business model"?' but 'What are the market structures and regulatory structures that will best produce the services customers need – both service presently provided by utilities and potentially provided by others?'" A high-level expert workshop convened by the Energy Future Coalition in July provided us guidance that has informed this presentation; a summary of key points from the workshop is attached at the end of this statement.

The 2007 report of the National Action Plan for Energy Efficiency, *Aligning Utility Incentives with Investment in Energy Efficiency*, offers a useful set of seven lessons, also attached at the end of this statement. The first is particularly relevant to this discussion:

- **Set cost recovery and incentive policy based on the direction of the market's evolution.** The rapid development of technology, the likely integration of energy efficiency and demand response, continuing evolution of utility industry structure, the likelihood of broader action on climate change, and a wide range of other uncertainties argue for cost recovery and incentive policies that can work with intended effect under a variety of possible futures.

We recommend using one or more pilots to facilitate the electric utility's transition to a new regulatory model, and Maryland is well suited to take this on – it has enlightened political leadership, decoupled utilities, and disgruntled consumers ready for a change. A wholesale transition is too complex to take on all at once, however. Geographically representative areas of perhaps 100,000 customers each, involving both Pepco and BGE, could be designated as test beds of new incentive structures for the utilities. A year of negotiation and preparation, followed by a year of demonstration, would go a long way toward providing the answers needed for transformation of the state's utility sector. The pilots would provide needed information to state policymakers and other stakeholders, illustrating via a real-world experiment the questions, challenges, and new capabilities they must confront to move towards a different industry structure. Ultimately, the pilots would give confidence to state policymakers, utilities, and investors that these changes can be accomplished without jeopardizing the reliability or cost of electricity in the state – and indeed, could provide utilities with an opportunity to significantly enhance shareholder value.

The Energy Future Coalition would welcome the chance to work with Maryland to help design a transition toward a new national model of a reinvented electric sector that produces gain for consumers, not pain.

Thank you for the opportunity to participate today.

Aligning Utility Incentives with Investment in Energy Efficiency, a resource of the National Action Plan for Energy Efficiency, December 2007: Executive Summary, "Final Thoughts":

- **Set cost recovery and incentive policy based on the direction of the market's evolution.** The rapid development of technology, the likely integration of energy efficiency and demand response, continuing evolution of utility industry structure, the likelihood of broader action on climate change, and a wide range of other uncertainties argue for cost recovery and incentive policies that can work with intended effect under a variety of possible futures.

- **Apply cost recovery mechanisms and utility performance incentives in a broad policy context.** The policies that affect utility investment in energy efficiency are many and varied and each will control, to some extent, the nature of financial incentives and disincentives that a utility faces. Policies that could impact the design of cost recovery and incentive mechanisms include those having to do with carbon emissions reduction; non-CO2 environmental control, such as NOX cap-and-trade initiatives; rate design; resource portfolio standards; and the development of more liquid wholesale markets for load reduction programs.

- **Test prospective policies.** Complex mechanisms that have many moving parts cannot easily be understood unless the performance of the mechanisms is simulated under a wide range of conditions. This is particularly true of mechanisms that rely on projections of avoided costs, prices, or program impacts. Simulation of impacts using financial modeling and/ or use of targeted pilots can be effective tools to test prospective policies.

- **Policy rules must be clear.** There is a clear link between the risk a utility perceives in recovering its costs, and disincentives to invest in energy efficiency. This risk is mitigated in part by having cost recovery and incentive mechanisms in place, but the efficacy of these mechanisms depends very much on the rules governing their application. While state regulatory commissions often fashion the details of cost recovery, lost margin recovery, and performance incentive mechanisms, the scope of their actions is governed by legislation. In some states, significant expenditures on energy efficiency by utilities are precluded by lack of clarity regarding regulators' authority to address one or more of the financial impacts of these expenditures. Legislation specifically authorizing or requiring various mechanisms creates clarity for parties and minimizes risk.

- **Collaboration has value.** The most successful and sustainable cost recovery and incentive policies are those that are based on a consultative process that, in general, includes broad agreement on the aims of the energy efficiency investment policy.

- **Flexibility is essential.** Most of the states that have had significant efficiency investment and cost recovery policies in place for more than a few years have found compelling reasons to modify these policies at some point. These changes reflect an institutional capacity to acknowledge weaknesses in existing approaches and broader contextual changes that render prior approaches ineffective. Policy stability is desirable, and policy changes that have significant impacts on earnings or prices can be particularly challenging. However, it is the stability of impact rather than adherence to a particular model that is important in addressing financial disincentives to invest.

- **Culture matters.** One important test of a cost recovery and incentives policy is its impact on corporate culture. A policy providing cost recovery is an essential first step in removing financial disincentives associated with energy efficiency investment, but it will not change a utility's core business model. Earnings are still created by investing in supply-side assets and selling more energy. Cost recovery plus a policy enabling recovery of lost margins might make a utility indifferent to selling or saving a kilowatt-hour or therm, but still will not make the business case for aggressive pursuit of energy efficiency. A full complement of cost recovery, lost margin recovery, and performance incentive mechanisms can change this model, and likely will be needed to secure sustainable funding for energy efficiency at levels necessary to fundamentally change resource mix.

Piloting the Coming Transition in the Electric Utility Industry: Key points from the July 11, 2012, high-level workshop

Background and Questions for Discussion

The electricity sector must change – it must decarbonize its generation, convert its system management and monitoring to digital technology, embrace smart consumer appliances and electric vehicles, integrate a myriad of distributed and renewable sources, and interact with customers who have the ability to respond to time-sensitive power costs. Other factors are converging on utilities at the same time: stagnant electricity sales, energy efficiency improvements, and distributed generation – all of which reduce utility revenues – even as the need for reliability, power quality, and price stability, and related capital investments, is increasing. What is the electric sector doing to anticipate and respond to these forces? Can a planned and managed transition can be designed and tested – e.g., with a pilot project of ~100,000 customers – that shows how to deliver these benefits without the "creative destruction" of the utilities?

The Transition Can Be Cost-Effective

The estimated national cost of grid unreliability ($150 billion per year), system inefficiency ($100 billion per year), and productivity penalties ($500+ billion per year) can be addressed for much less – ~$25 billion per year. However, utilities will not invest in critical infrastructure unless they can recover their investments. Regulators can only help utilities recover their investments, while protecting ratepayers, if they recognize the value of these benefits. They currently cannot do so.

Encouraging Innovation is Essential

Utilities by nature are typically not innovators; we need a regulatory model that gives innovators and entrepreneurs the chance to compete and serve consumers. Government and regulatory agencies should set the rules, but we are not going to get the energy equivalent of the iPhone and BlackBerry until we open up the industry to innovation. Whether such competition from new entrants would leave utilities a sufficient basis for viability, much less growth, is an open question.

Alternate Regulatory Business Models Are Needed

Peter Fox-Penner outlined two paths forward for electric utilities in his book, *Smart Power* – the "Smart Integrator" model, where utilities operate a smart distribution network that is open to many other providers of products and services, and the "Energy Service Utility" model, where utilities provide energy services (e.g., lighting and air conditioning) instead of just kilowatt-hours. Either business model could integrate such emerging technologies as distributed generation, microgrids, underground transmission and distribution lines, time-of-use or dynamic pricing, cybersecurity standards, community power acquisitions, and/or delivered voltage monitoring.

Utilities Must Be Engaged in Designing Solutions

Many innovative technologies need a utility to implement them, and others – especially microgrids and distributed electricity generation – rely on utilities for backup power. Utilities must be an integral part of any pilot project, and any new business model must allow them to recover their fixed costs and reasonable returns while they deploy energy efficiency and new end-use technologies, including solar, despite the effects of those technologies on electricity demand.

Why Maryland?

Maryland's decoupled utilities are positioned to benefit from a new business model. They know a very different future is inevitable. Maryland's recent regulatory innovations give the state a head start toward a new utility business model. Recent events have made Maryland's consumers particularly anxious for improved reliability. The state has strong leadership from an actively engaged governor and Public Service Commission and the innovative Maryland Energy Administration in pursuing and implementing ambitious energy efficiency and renewable energy goals.

SUMMARY STATEMENT OF REID DETCHON, ENERGY FUTURE COALITION

Where the arcane world of utility regulation impacts directly on the public, the result is often unhappy consumers.   We will propose, however, that the moment is right for bold change in the regulatory compact that links utilities and their customers – change that will lead to a novel outcome: happy consumers.

Reliability, renewable energy, energy efficiency, and the smart grid are areas where the state's utilities are not providing the optimal mix of benefits to consumers. In ordinary commerce, that would be called a market failure. Yet regulation is not optimizing consumer benefit – a regulatory failure that is also a root cause of performance failure. Even as the state considers how to drive near-term improvements in reliability, it should also consider changes to the regulatory structure that will yield broader long-term benefits to consumers and to the state's economic vitality – by rewarding performance, not investment, measuring outputs, not inputs.

Incentives for energy efficiency have been the subject of relentless experimentation by state regulators, but with only partial success. The key, as recognized in the widely supported National Action Plan for Energy Efficiency, is aligning the financial incentives of utilities with the delivery of cost-effective energy efficiency. To date, such changes have been grafted onto the pre-existing financial model with limited success. The coming transition in utility practices requires a transformative approach, away from an investment-based, rate-of-return model toward one that is based on specific performance metrics that are carefully negotiated and agreed in advance – and Maryland can take a lead role nationally. If you reward investment, you get more investment; if you reward performance, you will get better performance.

Performance-based contracting is common in many fields, and it certainly should be possible to apply it to utilities through performance metrics for key consumer benefits such as reliability and efficiency. Utilities should be rewarded that reduce their customers' costs and that welcome cost-effective distributed generation. Customer service and satisfaction is another area that should be rewarded for good performance.

Utilities should not be rewarded simply for making smart grid investments, but for maximizing smart grid value (by completing the difficult organizational, operational, data utilization and customer-facing changes required). Performance-based ratemaking is a perfect vehicle to facilitate utility innovation and transformation of the business model. 23 states currently have performance incentives for energy efficiency, with six other states awaiting regulatory approval. This progress on energy efficiency alone needs to be applied more generally to the way utilities are compensated.

We recommend using one or more pilots to facilitate the electric utility's transition to a new regulatory model. Maryland is well suited to take this on – it has enlightened political leadership, decoupled utilities, and disgruntled consumers ready for a change. Geographically representative areas of perhaps 100,000 customers each, involving both Pepco and BGE, could be designated as test beds of new incentive structures for the utilities. A year of negotiation and preparation, followed by a year of demonstration, would go a long way toward providing the answers needed for state policymakers, utilities, and investors that these changes can be accomplished without jeopardizing the reliability or cost of electricity in the state – and indeed, could provide utilities with an opportunity to significantly enhance shareholder value.

The Energy Future Coalition would welcome the chance to work with Maryland toward that end.

Description of Ratemaking Presented to House Economic Matters Committee

Gregory V. Carmean

February 2, 2012

Developing Distribution Rates

- Establish Revenue Requirement
- Cost Assignment to Customer Classes
- Design Rates to Collect Revenue Requirement by Class

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Distribution Rate Statutory Standard

Just and Reasonable Rates

- Rates which result in an operating income to the public service company that yields, after reasonable deduction for depreciation and other necessary and proper expenses and reserves, a reasonable return on the fair value of the public service company's property used and useful in providing service to the public.

Section 4-101 of Public Utilities Article

Revenue Requirement Formula

Line No.	Description		
1	Rate Base (Investment in plant)	XXXX	
2	Multiplied by Rate of Return	X%	
3	Required Operating Income		XX
4	Operating Revenue	XXX	
5	Less: Operating Expenses	XXX	
6	Achieved Net Operating Income		XX
7	Operating Income Deficiency/(Sufficiency) (line 3 less line 6)		XX
8	Gross Revenue Conversion Factor		1.79
9	Revenue Deficiency (Sufficiency): Amount of required rate increase (decrease) (Line 7 x Line 8)		XX

Key Regulatory Principles

- Matching – need to ensure that revenues, expenses and rate base use consistent periods
- Known and Certain – preference for actual auditable expenses
- Prudence – cost incurred by a utility as a result of managerial imprudence cannot be recovered from the company's customer
- Balancing – Commission must weigh the interests of shareholders and ratepayers in establishing rates
- Retroactive Ratemaking – setting rates which permit a utility to recover past losses or which require it to refund past profits

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Test Period (Rate Period)

- The test period is typically the base period for developing the rate base and cost of service for the years rates will initially be in effect

- The test year is generally a recent historical 12-month period

- The period where rates will initially be in effect is referred to as the rate effective period

- The rate effective period will be:
  - The test year with specific changes for known and measurable costs and/or events
  - The test year modified based on specific projections for changes anticipated to occur
  - The test year adjusted to a budgeted or totally projected year where the test year basically serves as a comparison tool

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Rate Base (Overview)

- Rate base represents the investment the utility has in plant, materials and supplies, and other assets that are used and useful in providing service and upon which the investors are entitled to receive a fair rate of return
- Matching Principle - Need to make sure there is a matching of the rate base with the revenue and expense items. Does rate base reflect the net plant investment that will be in service and servicing customers in the period rates are in effect? Does rate base include the investment needed to generate the test period revenues?
- Rate Base can be end of test period, the average test period, or a projected rate year. In Maryland, a historical test year average period is generally used.
- Typically, plant items and accumulated depreciation are based on a 13-month average amount, while some other items may use a beginning/ending average.

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Cost of Capital/Rate of Return

- The Cost of Capital is the rate determined by the Commission to be applied to the rate base to provide a fair return to investors
- Components of Capital Structure
  - Long-term debt
  - Short-term debt (depends on jurisdiction)
  - Preferred stock
  - Common equity
- Each of the components have different cost rates. The weighted cost of each component is used to determine the overall rate of return to be applied to rate base.

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Net Operating Income
Operating Revenues

- Operating Revenues – Types
  - General business revenues – sales of electricity to customers
  - Other operating revenues – includes items such as late charges, miscellaneous revenues, rent of electric property, pole attachments, royalties, etc.
  - Gains (losses) on sales of utility property

Maryland Public Service Commission

Items to Consider in Reviewing Revenues

- Weather normalized – Are the revenues included in the filing reflective of “normal” weather conditions?
- Normalized – Are the impacts of abnormal or non-recurring events excluded?
- Annualized – Based on annualization of tariffs currently in effect? (i.e., was there a mid-period change in rates, etc.) Any changes in special contracts?

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Items to Consider in Reviewing Revenues (Continued)

- Customer levels – Are customer levels reflective of the test year utilized?
  - Customer growth projections – reasonable, comparable to historic growth levels or projections, changes in trend
  - Any new large customers projected to come on-line
  - Any large customers projected to discontinue operations

- Miscellaneous or other revenues – Should any items be based on averages or historic levels? Any known changes in levels and types? Are any set in rates based on amortization of prior amounts?

Net Operating Income Expenses Concepts

- "Above-the-Line" vs. "Below-the-Line"
- Below-the-Line – Items not included in net operating income in determining revenue requirement. Includes items such as the following:
  - Lobbying
  - Donations/Contributions
  - Non-regulated revenues and expenses
  - Gains/Losses on sales of non-utility property

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Net Operating Income Expenses Concepts (Continued)

- "Above-the-Line" – Costs related to the provision of regulated service to customers.
- Typical Ratemaking Adjustments – Need to review on case by case/issue by issue basis
  - Remove expense items that are non-recurring or unusual – may also amortize depending upon item and situation
  - Add items not reflected or annualize not wholly reflected
  - Remove non-utility or "inappropriate" cost items
  - Remove items that do not benefit customers
  - Normalize items that fluctuate from period to period (such as average level)

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Operating Expenses
Main Categories

- FERC USOA – Federal Energy Regulatory Commission Uniform System of Accounts
  - Operating & Maintenance Expenses – Production, Transmission, Distribution
  - Administrative & General Expenses – Customer Accounting, Customer Service, A & G Salaries, Insurance, Employee Benefits, etc.
  - Depreciation & Amortization Expense
  - Taxes Other Than Income – Payroll Taxes, Property Taxes, Franchise Taxes, etc.
  - Income Taxes – State & Federal, Current & Deferred

Operating Expenses Items Considered

- Distribution Expenses, Includes Tree Trimming
- Administrative and General Expenses
- Customer Account Expenses
- Customer Service Expenses
- Outside Services
- Property Insurance
- Injuries and Damages
- Employee Pensions and Benefits
- Regulatory Commission Expense
- Labor Costs
- Depreciation Expenses
- Taxes

Maryland Public Service Commission

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